

June 1996

# WARTIME MEDICAL CARE

## Personnel Requirements Still Not Resolved



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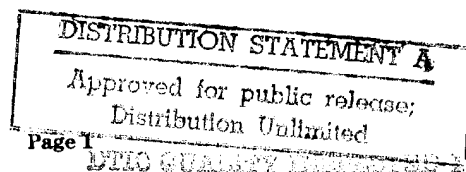
## Congressional Committees

Since 1994, the Department of Defense (DOD) and the services have produced several estimates of wartime medical personnel requirements. Section 745 of the 1996 National Defense Authorization Act (P. L. 104-106, February 10, 1996) directed us to study the reasonableness of the models each military service uses to determine appropriate wartime medical personnel force levels and to report our study results not later than June 30, 1996. Section 745 specifically required us to include (1) an assessment of the modeling techniques each service uses; (2) an identification of the models' ability to integrate reserve personnel to meet department requirements; (3) an analysis of the data used; and (4) an evaluation of the Secretary of Defense's ability to integrate the various modeling efforts into a comprehensive, coordinated plan for obtaining the optimum force level for wartime medical personnel.

After the section 745 language was drafted, DOD embarked on, but has not completed, another major wartime medical requirements study. This study is expected to modify the data contained in the service models and is intended to produce a unified DOD position on medical requirements. Because the study's results were unavailable as a baseline comparison, we were unable to fully respond to all section 745 objectives. This report reflects the status of our work to date. Specifically, it addresses the service models' results, their methodologies, and their inclusion of active duty and reserve medical personnel. In a separate report, we will examine DOD's updated wartime medical requirements study and, to the extent needed, address any remaining issues associated with the service models.

## Background

The Military Health Services System (MHSS), with an annual cost of over \$15 billion, has the dual mission of providing medical care to the military forces during war or conflict and to military dependents and retirees. The MHSS consists of over 90 deployable combat hospitals that are solely devoted to the wartime mission. In addition, over 600 medical treatment facilities, such as medical centers, community hospitals, and clinics, are available worldwide to care for wartime casualties, but also provide peacetime care to active duty dependents and retirees. The system employs over 184,000 military personnel and civilians with an additional 91,000 medical personnel in the National Guard and Selected Reserves.



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In the post-Cold War era, personnel downsizing and constrained budgets focused attention on DOD's need to determine the appropriate size and mix of its medical force. In 1991, the Congress required DOD to reassess its medical personnel requirements based on a post-Cold War scenario. Specifically, section 733 of the National Defense Authorization Act for Fiscal Years 1992 and 1993 (P. L. 102-190, December 5, 1991) required, among other things, that DOD determine the size and composition of the military medical system needed to support U.S. forces during a war or other conflict and identify ways of improving the cost-effectiveness of medical care delivered during peacetime.

In April 1994, DOD completed the required study, known as the "733 study." Although the study included all types of medical personnel, it used physicians to illustrate key points. It estimated that about 50 percent of the 12,600 active duty physicians projected for fiscal year 1999 were needed to treat casualties emanating from two nearly simultaneous major regional conflicts (MRC). When reserve forces were included, the study showed that the 19,100 physicians projected for fiscal year 1999 could be reduced by 24 percent. In March 1995, we testified that the 733 study results were credible and that its methodology was reasonable.<sup>1</sup> However, we noted that the study's results differed from the war plans prepared by the commanders in chief (CINC) for the two anticipated conflicts, due mainly to different warfighting and casualty assumptions.

## Results in Brief

In 1995, each service used its own model to determine wartime medical personnel requirements instead of adopting the 733 study's results. Taken together, the services' models offset nearly all of the reductions estimated in the 733 study, supporting instead, a need for about 96 percent of the active duty physicians projected for fiscal year 1999. Much of this difference resulted because the services assumed that significantly more people were needed for training and maintaining personnel to relieve deployed medical forces. Given these results, DOD has not planned significant reductions in future medical forces. By comparison, the overall DOD active duty end strengths are expected to decline by twice the rate of decline in medical forces from fiscal year 1987 to fiscal year 1999.

The modeling techniques the services used to determine medical requirements appear reasonable. However, the results of the models depend largely on the values of the input data and assumptions used.

<sup>1</sup>Wartime Medical Care: Aligning Sound Requirements With New Combat Care Approaches Is Key to Restructuring Force (GAO/T-NSIAD-95-129, Mar. 30, 1995).

Although their techniques differed in some ways, the services appropriately considered factors, such as current defense planning guidance, DOD policies for evacuating patients from the theater, and casualty projections. The service models also included requirements for both active duty and reserve medical personnel. At the time of our review, the services had done more detailed analyses of the active duty requirements than the reserve portion.

Given the dichotomy between the results of the service models and the 733 study, in August 1995, the Deputy Secretary of Defense directed that the 733 study be updated and improved. This ongoing study is intended to form the basis for a single DOD position on wartime medical demands and associated personnel. As such, it is to resolve differences in the key assumptions that drive medical force requirements. While the study was to be completed by March 1996, DOD has encountered difficulty in reaching agreement over some assumptions, such as the population-at-risk and casualty rates. Thus, the study has been delayed. The 733 update is using a unified DOD sizing model, which will supplant individual service models.

## **Service Models Estimate Medical Personnel Requirements Much Higher Than the 733 Study**

Following the 733 study, each service used its own model to determine wartime medical personnel requirements. Using these models, the services estimated that their wartime medical personnel requirements were almost as much as those projected for fiscal year 1999—offsetting most of the reductions suggested in the 733 study. Over the past several years, the services have maintained essentially the same number of active duty physicians, even though active duty end strengths have dropped considerably.

The Navy developed a model known as the Total Health Care Support Readiness Requirement to correct what it viewed as inaccuracies in the 733 study. The Air Force also developed a model patterned closely after the Navy's. In their models, the Navy and the Air Force used the medical personnel levels from the 733 study as their wartime baseline and then identified adjustments which, in their view, were needed to more accurately represent personnel required to treat combat casualties and to maintain operational readiness and training. Using these models, the Navy and the Air Force, in the summer of 1995, identified wartime active duty medical personnel requirements that supported 99 percent and 86 percent, respectively, of their fiscal year 1999 projections.

The Army also developed a model called Total Army Medical Department Personnel Structure Model (TAPSM) to determine medical personnel required to meet the medical demands of the two-MRC strategy. TAPSM differed from the Navy's and the Air Force's models in that the Army continued using its Total Army Analysis (TAA) process to estimate the baseline wartime requirements, whereas the Navy and the Air Force used the 733 estimates as their baseline. Building on the baseline obtained from TAA, the Army used TAPSM to determine additional medical personnel needed for medical readiness, such as rotation and training. In the summer of 1995, the Army's process identified wartime active duty medical personnel requirements that were 104 percent of the Army's fiscal year 1999 projections.

Major differences between the results of the service models and the 733 study occurred because the services made different assumptions about the personnel needed for medical readiness. These readiness requirements are intended to ensure that, at any point in time, DOD has enough personnel to care for deployed forces. Specifically, these readiness-related requirements support continuous training of medical personnel and a medical cadre in the United States that can replace or relieve deployed personnel as needed. While the 733 study made some provision for such requirements, the services' estimates assume that a much higher number of medical personnel are needed for such training and rotation.

The services' estimates of wartime requirements support a medical force projection that does not decrease nearly as much as the active duty force. Responding to changes in the national military strategy, DOD projects that by 1999 the active duty force will be reduced by one-third from the 1987 levels. At the same time, the services are projecting reductions of 16 percent in total active duty medical personnel and 4 percent in active duty physicians.

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## Services' Modeling Techniques Appear Reasonable

The services' modeling techniques for estimating medical personnel requirements appear reasonable. While we found some differences between the models, each determined requirements for similar categories of personnel. However, the models' results depend largely on the values of the input data and assumptions.

We assessed the services' modeling techniques by comparing the attributes of each model to the methodology used in the 733 study, which we had previously concluded was reasonable. We found that the services'

modeling techniques were consistent with the 733 study in that they used (1) current defense planning guidance for two MRCs, (2) DOD-approved policies for evacuating casualties from the theater, and (3) casualty projections.<sup>2</sup> Also like the 733 study, the services' techniques included active duty and reserve personnel working in hospital and nonhospital functions, those working in graduate medical education programs, and those needed for rotation to overseas installations. However, as described previously, the services assumed more medical personnel would be needed for training and rotation associated with medical readiness. These assumptions, not the modeling techniques, accounted for a major difference between the results of the 733 study and the services' models. The 733 study concluded that about 50 percent of the active duty physicians projected for fiscal year 1999 were not needed to meet wartime medical readiness requirements, while the services' models supported a need for 96 percent of the fiscal year 1999 active duty physicians.

DOD's current study of wartime medical personnel requirements, when completed, will present another analysis to compare with the services' modeling techniques. This analysis could reveal methodological or other differences not currently identified.

## Service Models Include Requirements for Active and Reserve Medical Personnel

In the services' medical personnel requirements processes, the demand for care emanating from the two-MRC strategy is translated into the number of hospital beds required. This demand is based on the number of anticipated casualties without regard to whether the beds will be staffed by active duty or reserve component medical personnel. The allocation between active and reserve components is made by analyzing when casualties are projected to occur during the conflicts and comparing that requirement to information on how soon active and reserve medical units can arrive in the theater. If high numbers of casualties in a theater are anticipated to occur early in a conflict, more active duty medical personnel will likely be required to provide medical care because active duty medical units generally can deploy more quickly than reserve units. Conversely, if high numbers of casualties do not occur until later in the conflict, the need for active duty medical personnel diminishes and more requirements can be met by reserve forces.

<sup>2</sup>Casualty projections are based on several assumptions about fighting a war, such as the population-at-risk, the severity of a conflict, the duration of combat, and injury rates. The actual number of casualties resulting from any model will vary according to values assigned to these assumptions. If large numbers of people are in a combat theater, for example, casualties are likely to be higher than would be the case with a smaller population-at-risk.

DOD's current study of medical requirements will examine the appropriateness of the mix between active duty and reserve medical forces. The outcome of this study will have important ramifications for sizing the medical components of each service and the number of medical personnel to remain on active duty status. If, for example, the study assumes that medical forces will be needed sooner than assumed in the 733 study, most, if not all, of the reductions in active duty medical personnel estimated in the original study could be nullified. On the other hand, if medical forces are assumed to deploy later, more reductions in active duty medical personnel could be made.

## 733 Update Is Using a Process Intended to Supplant Individual Service Models

DOD is currently updating its 733 study using a process intended to replace the individual service models for determining wartime medical personnel requirements. The update was directed by the Deputy Secretary of Defense, in August 1995, to respond to the continuing debate over the estimates for wartime medical personnel. The update is being led by the Director of DOD's Office of Program Analysis and Evaluation, which also conducted the original 733 study, under the general direction of a steering group of representatives from several offices.

The update will result in a new estimate of wartime medical demands derived from updated planning scenarios and force deployment projections. In an effort to arrive at one set of DOD requirements, the 733 update working groups have been attempting to reach agreement on the underlying assumptions with the key parties within DOD. However, the March 1996 completion has been delayed because of disagreements over some assumptions, such as the population-at-risk and casualty rates. DOD officials have not provided a firm date for completing the study, but they believe they are making progress in reaching agreement on input assumptions. They also believe such an agreement will establish a unified process for determining DOD-wide wartime medical demands.

After the wartime demand is established, the 733 update is expected to use a model to estimate medical personnel needed to meet the demand. DOD officials believe that, in the future, this model—the DOD Medical Sizing Model—will be used to determine total wartime medical personnel levels. According to DOD officials, if agreement is reached on the model and the assumptions to be used, wartime medical requirements will no longer be determined by the individual service models.

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## Scope and Methodology

We reviewed documents, reports, and legislation relevant to military medical staffing trends; each service's medical staffing model; the DOD Medical Sizing Model; and the 733 update study. We interviewed officials from the Office of the Assistant Secretary of Defense for Health Affairs; DOD's Office of Program Analysis and Evaluation; the Joint Staff; the Offices of the Surgeons General of the Army, the Navy, and the Air Force; the Office of Reserve Affairs; and the U.S. Army Concepts Analysis Agency in the Washington, D.C., area. We also interviewed officials from the U.S. Central Command, Tampa, Florida; the U.S. Transportation Command, Scott Air Force Base, Illinois; and the Army Medical Command, San Antonio, Texas.

In assessing the reasonableness of the services' modeling techniques, we compared the attributes of each model with the 733 study. We obtained information from each service on the model formats, the underlying assumptions, and the types and sources of information used in developing the models. We met with the service representatives responsible for developing and using the models to gain an understanding of how each model worked. We did not attempt an in-depth validation of the accuracy of each model, rather, we reviewed the models to see if their methodologies were generally consistent with the 733 study.

We initially concentrated on looking at how each model developed the active duty medical personnel requirements from the total wartime bed requirements. We also compared the services' modeling techniques with each other. We intended to compare each service's input values (rates) for such factors as wounded-in-action, conflict intensities, conflict durations, and disease and non-battle injuries with similar rates depicted in the CINC war plans and with the updated casualty rates being developed subsequent to the 733 study. However, before we started this phase, DOD decided to develop, as part of the 733 update, a single DOD-wide model for determining medical staffing requirements. Since the update is still ongoing, we are at this time unable to fully assess the reasonableness of the data inputs and assumptions, the appropriateness of the active/reserve component split, and the degree to which DOD integrates the medical requirements of the three services.

We conducted our review from June 1995 to June 1996 in accordance with generally accepted government auditing standards.

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## Agency Comments

In oral comments, DOD fully concurred with this report's findings and conclusions.

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We are sending copies of this report to other interested congressional committees; the Secretaries of Defense, the Army, the Navy, and the Air Force; the Commandant, U.S. Marine Corps; and the Director, Office of Management and Budget. We will also send copies to others on request.

If you or your staff have any questions about this report, please call me on (202) 512-5140. Major contributors to this report are listed in appendix I.



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